

Atty Dkt. No.: 10031482-1  
USSN: 10/828,986

**REMARKS**

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Claims 1-31 and 34 are pending.

Claims 1-6, 25-29 and 34 were examined and rejected.

Claims 1 and 2 are amended. Support for the amendment is found in the specification as originally filed, particularly page 8, lines 22-27. No new matter is added.

Reconsideration of this application is respectfully requested.

***Claim Rejections 35 U.S.C. § 112, second paragraph***

Claims 1-6 and 25-29 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In attempting to establish this rejection the Examiner argues that the term "stringent hybridization conditions" is indefinite.

Without any intention to acquiesce to the correctness of this rejection and solely to expedite prosecution, claims 1 and 2 are amended to recite "stringent assay conditions", a clear definition for which is set forth on page 8 of the specification.

Claims 1-6 are also rejected as indefinite for allegedly reciting the phrase "A CpG unstructured nucleic acid oligonucleotide containing at least one UNA nucleotide which hybridizes". The Examiner argues that it is unclear whether it is the oligonucleotide or the UNA nucleotide that hybridizes. A close review of the claims, however, reveal that the claim requires an "oligonucleotide containing at least one UNA nucleotide and which hybridizes..." (emphasis added). As such, it is clear that the oligonucleotide, rather than the nucleotide that hybridizes.

The Applicants submit that this rejection is moot and may be withdrawn.

***Claim Rejections – 35 U.S.C. § 103***

Claim 1-6 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Huang (6,605,432) in view of Katyavin (5,912,340).

According to the MPEP § 706.02 (j), to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion

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or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. ~~Second~~, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

As best understood by the Applicants, the Examiner has attempted to establish this rejection by arguing that Huang's CpG polynucleotide-containing arrays, in combination with Katyavin's UNA oligonucleotides, renders the instant claims obvious. Simply put, the Examiner argues that the instant claims are obvious because Huang would get better results if his probes were be modified to contain UNA nucleotides.

However, Huang states that his method is highly accurate, sensitive, and efficient (see, e.g., the first paragraphs of the Summary of the Invention and of the Detailed Description, among other places). Huang's makes no mention of low signal strength, probe secondary structure, or of any other limitation that could be cured by use of a UNA nucleotide. Thus, Huang provides no problem that one of skill in the art would be motivated to cure using UNA nucleotides. There is no "pointer" in Huang, or available in the art at the time of filing, that would lead one of skill in the art to use UNA nucleotides. Likewise, there is no pointer in Katyavin, or anywhere else in the art, that would lead one of skill in the art to make CpG-containing UNA oligonucleotides. Thus, there is nothing that would point one of skill in the art in the direction of the claimed subject matter.

Stated a different way, one of skill in the art at the time of filing would not logically look towards Katyavin's disclosure as a way of improving Huang's method because there is no recognized problem with Huang's method, and no pointers that would lead them to that combination.

In arguing that one of skill in the art would modify Huang's array to have UNA nucleotides, the Examiner simply argues that one of skill in the art would have been motivated to combine Huang and Katyavin's disclosure in order to make an array of that probes that hybridize more efficiently. That said, however, Huang makes no mention that hybridization efficiency is low, or could be improved. In fact, since Huang relies on PCR methods for amplifying the genome sample (which generally work very efficiently), there would be no need to increase hybridization efficiency.

Atty Dkt. No.: 10031482-1  
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In a secondary argument, the Applicants submit that according to Huang's disclosure, Huang requires probes that are very long and PCR generated. Since Huang's probes are enzymatically generated, they cannot be synthesized using UNA nucleotides. Thus, even if one of skill in the art could recognize the benefits of using UNA nucleotides to decrease secondary structure in detecting CpG methylation, exactly how Huang's disclosure could be modified to incorporate UNA nucleotides would be less than apparent.

The Applicants submit that without the roadmap provided by the instant patent application, one of skill in the art would have no reason to combine Huang and Katyavin in the manner proposed in this Office Action. This rejection appears to be based on hindsight, and should be withdrawn.

The Applicants submit that this rejection has been adequately addressed. Withdrawal of this rejection is respectfully requested.

Claims 25-29 and 34 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Huang (6,605,432) in view of Katyavin (5,912,340) and Ahern (The Scientist, 1995).

As noted above, Huang cannot be combined with Katyavin to render the instant claims obvious because: a) one of skill in the art would have no motivation to make the modification proposed by the Examiner and b) it is not possible to modify Huang's probes in the manner proposed.

Ahern is provide a kit. Ahern's kit fails to meet the deficiencies of Huang and Katyavin and, as such, this rejection should be withdrawn.

Withdrawal of this rejection is requested.

JUN 08 2007

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USSN: 10/828,986**CONCLUSION**

Applicants submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone James Keddie at (650) 833-7723.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078, order number 10031482-1.

Respectfully submitted,  
BOZICEVIC, FIELD & FRANCIS LLP

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By: 

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